Power supply reliability

— What kinds of solutions the Company take to improve the reliability of power supply to consumers and the overall efficiency of the grid complex?

— Ensuring reliable power supply is one of the priority tasks we set for our branches and subsidiaries. To this end, we implement annual measures of the production programme, which includes maintenance and repair, as well as renovation of main and auxiliary power grid equipment, buildings and structures, maintenance and repair of motor transport and special equipment, and other necessary measures. In addition, there are programmes aimed to improve the power supply reliability of struggling regions.

Personnel training, drills and exercises also go a long way. Sure enough, upgrade and renovation of infrastructure is very important. This work falls under the permit of the investment programme.

Moreover, the Rosseti Group is directly involved in developing the procedure for interaction between electric power entities in the event of outages in ownerless grids; in part, the situation will be brought under control by regulations on the creation of backbone territorial grid companies.

Yevegeny Lyapunov,
Deputy General Director — Chief Engineer

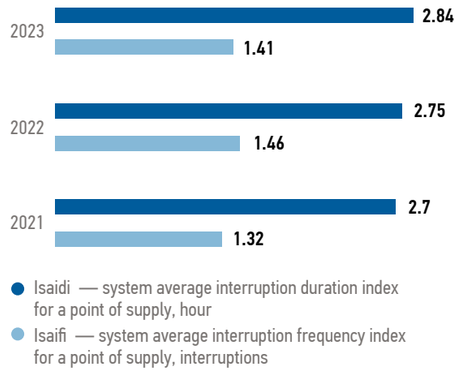
Timely and high-quality delivery of production programmes, particularly, with the application of a risk-based approach, makes it possible to annually improve the efficiency of measures taken and maintain the high reliability of power grid equipment, as evidenced by the absence of growth in the actual values of reliability indicators of the services rendered relative to the reliability level established by the tariff regulation authorities. Despite the actual increase compared to 2022, the system average interruption duration index (Id) improved against the target value set by FAS of Russia for 2023 (0.03192 hours) by 59%.

The year-on-year increase in the number of process faults across the Rosseti Group in 2023 can be explained by higher number of failures caused by the adverse impact of natural and climatic phenomena, as well as the interferences of unauthorised persons and organisations.

Indicator	2021	2022	2023 plan	2023 actual	Change 2023/2022, %
System average interruption duration in the transmission grid complex, Id, hour/interruptions[1]	0.0110	0.0100	0.03192	0.0132	–59[2]
Indicative indicator — volume of under-delivered electric power Iens, MWh	2,356	4,705	–	3,444	–27
Number of process faults (accidents) in the 110 kV grid, thsd faults	9.8	9.4	–	9.6[3]	2
Number of process faults related to erroneous actions of all categories of the Company's personnel, faults	30	29	–	36[4]	24

[1] Actual indicators of reliability of the services provided correspond to the reliability level established by the Federal Antimonopoly Service of the Russian Federation (planned values: 2022 — 0.03241; 2023 — 0.03192).
[2] Compared with the planned indicator for 2023. The indicator is improved by 59%.
[3] For correct calculation of dynamic pattern, the data do not include the branches established in 2023, as well as JSC RES, JSC Electromagistral, JSC Energetik.
[4] For correct calculation of dynamic pattern, the data do not include the branches established in 2023, as well as JSC RES, JSC Electromagistral, JSC Energetik.

Power supply reliability indicators



In 2023, the indicators of reliability of services rendered Isaidi (system average interruption duration index per point of supply, hour) and P_{ISAIFI} (system average interruption frequency index per point of supply, interruptions) are comparable to the values of 2022.

The Company has the Regulations on the Uniform Technical Policy in the Power Grid Sector[1] in place (hereinafter referred to as the Uniform Technical Policy). The purpose of the document is to define the main technical areas that ensure higher reliability and efficiency of the power grid complex in the short and medium term while guaranteeing the safety and reliability of power supply to consumers, as well as the transition to risk-oriented management coupled with digital technologies and big data analysis.

Innovative activities

Innovative development is one of the Rosseti Group's strategic priorities with a focus on improving the efficiency of power grid management and enhancing the reliability, quality and efficiency of consumer power supply. Cutting-edge technologies help to reduce operating costs and significantly improve the safety of operations.

The Company has in place the Innovative Development Programme for the period of 2021–2025 with an outlook until 2030[2].

Main tasks of innovative development

- Developing, testing and enabling the commercial use (distribution) of innovative equipment and practices, with due account for the factors of comprehensive efficiency and based on the life cycle management of objects and systems
- Switching to being an 'adaptor' of available innovative solutions and technologies market to tackle current problems, including through the development of the 'open innovations' tool
- Improving the innovation management system, in particular, through the effective use of intellectual property management systems and regulatory and technical documentation
- Laying the groundwork for the development of advanced scientific research, process operations and advanced production in the Russian Federation
- Developing human resources with promising competences to meet the objectives of innovative development
- Better gearing with the subjects of the sectoral innovation ecosystem — small and medium enterprises, Russian innovation development institutions, technology platforms, higher education bodies, research and design organisations, equipment manufacturers, etc.
- Laying the groundwork for the transition to the use of intelligent devices based on electronic components of Russian make

[1] Resolution of the Board of Directors of PJSC Rosseti dated 17 October 2022 (Minutes No. 592 dated 20 October 2022).
[2] Approved by the decision of the Company's Board of Directors (Minutes No. 577 dated 9 June 2022).